Measure wind conditions anywhere

AQ510
THE WIND FINDER

AQSystem
Remote sensing technique

THE VALIDATED SODAR SYSTEM

You may think that it looks like a certain robot from a sci-fi movie. But the AQ510 is very real and on the market. It's designed to be weatherproof, portable and scan the atmosphere with meticulous precision.

With three fixed horns it uses sound to measure the wind speed, wind direction and turbulence. In any environment and any weather condition, every five meters between 40 and 200 meters. Wherever you want, any time of the year.

The modular energy system concept needs minimal attendance and lets you operate without any permits, sub contractors or additional constructions.

If that doesn't blow you away, we're happy to tell you that we've launched a dedicated test site for remote sensing. That means that every AQ510 is validated against a fully IEC 61400-12-1 compliant met mast.

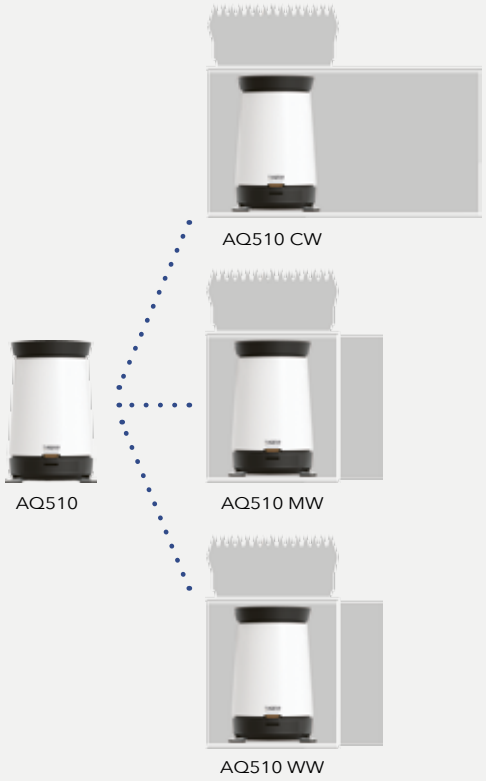
In the rest of this folder we've tried to explain as much as possible in detail. But if it leaves you with any question marks whatsoever, please get in touch.

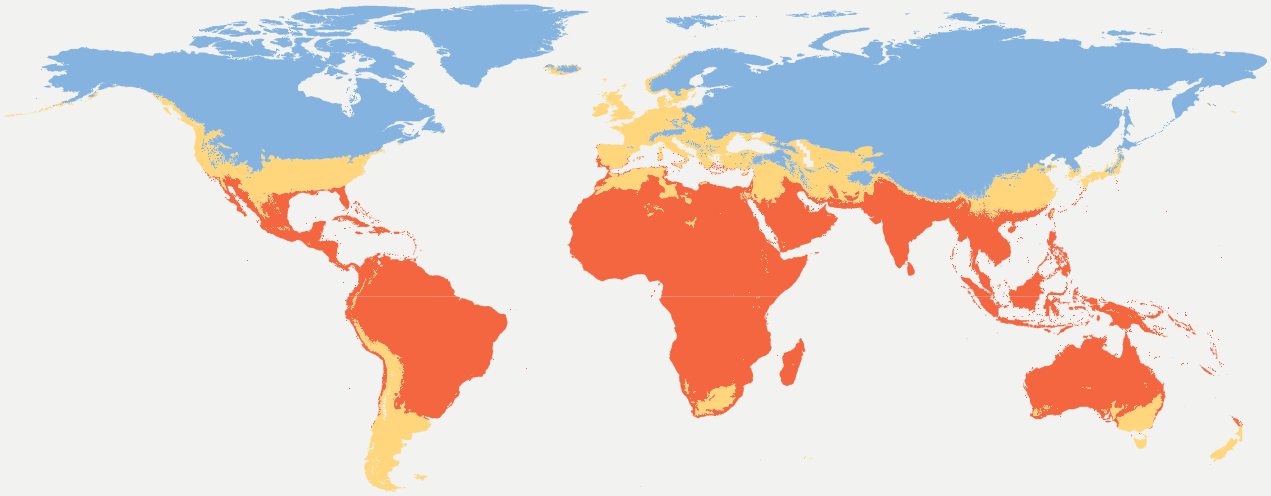
Regards,
Pelle Hurtig, CEO

GO WHEREVER THE WIND BLOWS

With our power pack and heating options, the AQ510 gives you a cost effective solution for any climate and any site. Below is a general recommendation, but local conditions can require different solutions.

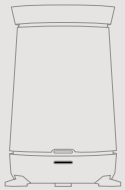
		230-120VAC or 12-24VDC	SOLAR PANELS	DIESEL GENERATOR	FUELCELL	AQWEBVIEWER	DIESEL HEATER	OPTIONAL TRAILER
AQ510 Instrument only		●				●		
AQ510 CW	Cold winter kit		●	●		●	●	●
AQ510 MW	Mild winter kit		●		●	●	●	●
AQ510 WW	Warm winter kit		●			●		●





CRAFTED FROM 40 YEARS OF INSIGHTS

With 40 years of experience, we've learned as much about wind and technology as we've learned about your needs as a user. That's why the new generation of Wind Finder is full of new features, but still seamless to use.

Comparison between:	AQ510	AQ500
		
Power consumption	15 W	50 W
Transmitting frequency	4300 Hz	3144 Hz
Zenith angle	17 degress	15 degrees
Integrated electronics	Yes	No
Standard GPS	Yes	No
Standard tilt sensor	Yes	No
High turbulence data availability	Yes	No
Moulded aluminium platform	Yes	No
Future proof electronics (Linux)	Yes	No
AQademy included	Yes	No
Optional precipitation sensor	Yes	No

ALL REQUIREMENTS MET

Being able to trust your output is crucial. That's why we've launched a dedicated test site for remote sensing, to compare the AQ510 with traditional anemometry. The site and instrument mounting is fully IEC 61400-12-1 compliant and approved by GL Garrad Hassan.

"It is very positive to see that AQSystem has launched a dedicated test site for remote sensing, potentially allowing high quality performance verifications."

– Detlef Stein, at GL Garrad Hassan

WHY THE AQ510 ALWAYS DELIVERS

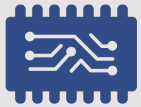
New antenna
The redesigned antenna enclosure, including integrated electronics, gives you a complete wind measuring instrument.

New zenith angle
To give you less scatter we have adjusted the zenith angle from 15° to 17°.

Moulded aluminum platform
To ensure that the speakers are in the exact correct position, they are mounted in a platform of aluminium. The same material as the speaker brackets and re-designed parabolic dishes.

Tilt sensor
With the tilt sensor you can always be sure that the system is installed correctly.

Low energy consumption
The AQ510 uses only 15 W and operation is completely free from emissions when used with the power solution with solar panels.



New frequency

By changing the transmitting frequency from 3144 Hz to 4300 Hz you get a smaller lobe (measurement volume) and more concentrated energy, which in turn gives you less scatter and higher data availability.

High turbulence data availability

You can now measure turbulence with the same high level of data availability as for horizontal wind speed. You can expect more than 92% data availability at 150 meters and more than 97% data availability at 100 meters.

Built-in GPS

A built-in GPS for geofencing and tagging of wind data comes as standard.

Optional precipitation sensor

For you to be able to keep track of rainfall and snowfall, precipitation sensor now comes as an option.

Customizable power and heating solutions

You can now choose between several well proven power and heating solutions and configure them for your specific needs.

Weatherproof design

Properly equipped, the AQ510 can handle everything from arctic climates with temperatures down to -40 °C, to climates with temperatures above +40 °C.

Comprehensive data

You get a detailed wind profile with measurements every five meters between 40 and 200 meters height.

Linux Operating System

By redesigning our electronics and moving from DOS to Linux, features and upgrades will both be easier and more affordable for you in the future.

Web based monitoring

The web based monitoring solution is easy to use and gives you a clear overview of your system's activity.

CHOOSE THE SOLUTION THAT SUITS YOU

The power packages and heating options can be fully customized for a cost effective solution for your specific measurement site.

Choose the AQ510 CW for cold winter sites, or the instrument AQ510 if you have a grid connection available or want to upgrade your existing wind finder systems with the latest remote sensing technology.

Specifications

Technical data

Measurement range	40 - 200 m
Height resolution	5 m
Accuracy horizontal wind speed	± 2% (for wind speeds above 4 m/s compared to a cup anemometer in flat terrain with homogenous vegetation and after correction for vector-scalar average difference)
Accuracy wind direction	< 5°
Availabilty of wind and turbulence data	> 92% at 150 m; > 97% at 100 m
Wind speed range	0 to 30 m/s
Vertical wind speed range	± 2.2 m/s
Mean value period	10 min
Transmitting frequency	4300 Hz
Zenith angle	17°
Pulse power	max. 250 W
Acoustic power	17 W
Operating temperature range	-40 - 60 °C
Operating humidity range	0 to 100% RH
Interface	AQWebviewer
Data transfer	GPRS (omni-direction antenna included)
Data format	ASCII
Power consumption	15 W
Dimension [m] / Weight (acoustic system)	1.6 (height) x 1.0 (diameter) / approx. 92 kg

Available power supply solutions

Grid connection	120 - 240 VAC or 12 VDC
Solar module	200 W / 12 VDC x 2, totally= 400 W / 12 VDC
Fuel cell	110 W / 12 VDC (included only in mild winter kit)
Diesel generator	3.2 kW / 230 VAC / single phase (included only in the cold winter kit)

AQ510 wind finder	***Grid connection***	***Warm winter kit***	***Mild winter kit***	***Cold winter kit***
Order No.	510-101	510-102	510-103	510-104
Grid	Yes	No	No	No
Solar module	No	Yes	Yes	Yes
Fuel cell	No	No	Yes	No
Diesel generator	No	No	No	Yes (200 l tank)
Dimension [m]	1.6 (height) x 1.0 (diameter)	2.2 (height) x 1.5 (width) x 2.1 (length)	2.2 (height) x 1.5 (width) x 2.1 (length)	2.2 (height) x 1.5 (width) x 3 (length)
Weight	Approx. 92 kg	Approx. 140 kg	Approx. 290 kg	Approx. 620 kg

An optional trailer can be ordered to all AQ510 configurations. Order No. 510-05.

MASTER THE WIND

A tool is never better than its user. To get the most out of your investment in AQ510, we give you the opportunity to get a comprehensive traning in AQ510 useage and data handling. The three day AQademy takes place at the beautiful Beckershof Mansion a couple of hours south of Stockholm. It's a combination of theory, excursions, fantastic food and cheerful company. The course has been greatly appreciated by our clients, and if you are a first time buyer of the AQ510, the AQademy is included.

"This course enhanced my understanding of important aspects of the deployment and the analysis of data. I would thoroughly recommend this course to anyone interested in the analysis of data from the AQSystem Sodar device."

– Iain Campbell, Wind Resource & Remote Sensing Analyst, RES Group

ABOUT US

AQSystem was founded in 1989, but the story about the company started twenty years earlier. Mats Hurtig was developing measuring equipment with sodar technique for the Swedish National Defense & Research Institute, and together with his team of engineers they were the first in Europe to launch a remote sound sensing system.

Today we're one of the market leaders in cost-effective remote sensing solutions. Our family-owned company is based in Sweden, but our clients are from all over the world. By combining our experience with new technologies, we always strive to give you the best solutions for wind measurement. That's why we don't settle with a state of the art sodar system, but also have training courses at our AQademy, hot line support and on-site repair service.

If you want to know more about us, or what we can do for you, please get in touch with us. www.aqsystem.se

PORTABLE. DURABLE. RELIABLE.

The AQ510 is the new generation of portable sodar systems. It's developed with more than 40 years of experience, and is the first to be verified against traditionally anemometry in the manufacturing process. That gives you reliable and high data availability in any climate with just the flick of a switch.

www.aqsystem.se

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